

## Essential Oil of Citrus Sinensis for the Treatment of Premenstrual Syndrome; a Randomized Double-blind Placebo-controlled Trial

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### Abstract

**Background:** Premenstrual syndrome is characterized by a set of behavioral, somatic and affective symptoms of varying severity that occur 7-10 days before the onset of menstruation and disrupt personal and social life. The symptoms usually subside by the beginning of menstruation flow. Different causes have been proposed for the syndrome as have been medical and surgical methods for its treatment. A recent approach relies more on the use of food supplements and herbal drugs. Citrus essence contains compounds such as limonene, flounder and citral with proposed sedative and antispasmodic effects in addition to its antidepressant properties. These effects are similar to those of fluoxetine which is an effective medication in the treatment of premenstrual syndrome. Therefore, this research was designed to determine the efficacy of citrus essence on the severity of premenstrual symptoms in dormitory students of Shahid Beheshti University of Medical Sciences during 2009-2010.

**Methods:** This study was a randomized, double-blind, placebo-controlled trial done on 80 students suffering from premenstrual syndrome. The students completed a daily symptom rating questionnaire for two consecutive menstrual cycles. Following the definitive diagnosis of PMS, the students were randomly divided into two groups and received, either 10 drops of citrus essence or placebo drops, three times a day during the luteal phase for two cycles. The data collecting tools, a questionnaire and a daily symptom rating form, had been evaluated for content validity and their reliability had been measured by Cronbach's Alpha Reliability Coefficient (0.080). A p-value of  $0 < 0.5$  was considered statistically significant.

**Results:** The two groups were similar in terms of demographic characteristics and overall baseline severity of the symptoms. The group on citrus essence witnessed a significant reduction of 46.08% in the symptoms compared to the group on placebo 14.21%, ( $p < 0.001$ ). After the intervention, there were also significant decreases in the severity of physical and psychological symptoms in both citrus essence (respectively, 24.3% and 21.78%) and placebo groups (respectively, 2.07% and 9.21%), ( $p < 0.001$ ).

**Conclusion:** The study showed that citrus essence could reduce the severity of premenstrual syndrome. The essence is suggested to be taken during the luteal phase in two consecutive cycles.

**Keywords:** Citrus essence, Herbal Medicine, Premenstrual syndrome.

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